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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WARTALOWICZ, PAUL A	

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1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/771,919	HERSHKOWITZ ET AL.	
	Examiner	**Art Unit**	
	PAUL A. WARTALOWICZ	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/9/09 have been fully considered but they are not persuasive.

Applicant argues that both Tonkovich and Khandkar are not drawn to regenerative bed systems, but to continuous steady state systems and that neither Tonkovich, nor Khandkar suggest the application of their high space velocity steam reforming to the cyclic, regenerative bed configuration.

However, all three references are drawn to reforming processes in general. It is unclear how the distinction of continuous/regenerative systems renders the combination non-obvious. It appears that both Khandkar (col. 7) and Tonkovich (col. 9) teach similar catalyst materials as those of Kobayashi (col. 3, lines 25-31) such that one of ordinary skill in the art would recognize that similar residence times in Khandkar and Tonkovich (due to high space velocities) would be equally applicable to the regenerative nature of the process in Kobayashi.

Additionally, applicant argues that Kobayashi does not teach how an artisan would configure its apparatus to allow for the claimed space velocities.

However, it appears that the processes of both Tonkovich and Khandkar use multiple reactors (Kobayashi, col. 9) (Khandkar, col. 10, fig. 3). Therefore, it appears that it is well known to use the claimed space velocities in a process using multiple reactors.

Additionally, it appears the claim recites that regenerating, reforming, and cooling be conducted at high pressure and temperature conditions sufficient to provide synthesis gas at a temperature…in the range of temperatures used to feed in the high temperature water gas shift reactions.

It appears that the prior art teaches a method of producing synthesis gas at a temperature in the range of temperatures used in high temperature water gas shift reactions such that regenerating, reforming, and cooling is conducted at a pressure and temperature to provide a synthesis gas stream having a temperature suitable for water gas shift reactions (Kobayashi, col. 3, 8).

Applicant argues that in contrast to Kobayashi, applicants' shift and separation means are performed only in the forward (non-cyclic, per claim 1, part c) and that Kobayashi's lack of concern from for reactor volumes is evidenced by all reactions being serial and required for each cycle which teaches away from the high space velocity.

However, it appears that an embodiment of Kobayashi provides for bypassing the water gas shift reaction (col. 6, lines 45-50; fig. 3). Additionally, it does not appear that the method of Kobayashi would lead one of ordinary skill in the art to the conclusion that Kobayashi is unconcerned with reactor volumes or efficiency. Some evidence of this is the teaching that some components of the apparatus are bypassed when conducting the regeneration cycle in order to provide reduced pressure in the absorber (col. 6, lines 42-47).

Applicant argues that amended claim 5 distinguishes over Towler because applicants' cooled syngas is measured at the outlet of the regenerative zone, controlled by the zones heat transfer properties as taught by the specification and Towler teaches that the syngas is cooled by combining with water.

However, Towler is only relied upon to teach the temperature profile in a substantially similar process as Kobayashi.

It appears that the prior art of record teaches cooling the effluent of the reformer with a regenerating bed. (Kobayashi, col. 3, lines 40-52). Towler teaches a temperature of 700°C at the end of the reformer (analogous to the first zone of the present invention) and a temperature of 400-450°C after a heat exchange step for the purpose of providing an effluent with a suitable temperature for water gas shift reaction (cooled with water, col. 14).

Therefore, it would have been obvious to incorporate the temperature profile (400-450°C after heat exchange) in Kobayashi in order to provide an effluent having a temperature for the substantially similar method of water gas shift processing as taught by Towler et al.

Additionally, Kobayashi teaches that the effluent of the reformer can be treated with a heat exchange process including water cooling and regenerative bed cooling (col. 3).

Because Kobayashi teaches the interchangeability of water cooling and regenerative bed cooling, one of ordinary skill in the art would recognize that the temperature profiles taught in Towler can be achieved by regenerative bed cooling.

Towler teaches a temperature of 400-450°C after a heat exchange step (col. 14). Therefore, it appears that Towler teaches measuring the temperature after a heat exchange step and that Kobayashi teaches a heat exchange step after reforming wherein the heat exchange step is performed by cooling the effluent of the reformer with a regenerating bed (analogous to the regenerative bed zone of the present invention) (col. 3).

Applicant argues that Sederquist does not add anything to the teachings of Kobayashi, Barr, Towler, Tonkovich or Khandkar and that the references do not teach or suggest, alone or in combination, a cyclic regenerative bed reformer having the space velocity of the claimed invention.

However, Sederquist is only relied upon to teach that there are two zones wherein the first zone contains packing comprising alumina or magnesium oxide (col. 6) and a steam reforming catalyst (col. 8) and that packing material may be present in both zones (col. 8). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Additionally, it appears that the references teach the claimed limitations as set forth in the rejection of record.

Claim Objections

Claim 1 is objected to because of the following informalities: it appears that in claim 1, line 15, "regenerating reforming and cooling" should recite --regenerating, reforming, and cooling". It appears that applicant is trying to claim that three parts of applicant's process are limited by pressure and temperature.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation "the regenerating reforming and cooling" in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi ‘530 in view of Barr ‘835 and any one of Tonkovich ‘506 or Khandkar ‘114.

Kobayashi teach a process for producing hydrogen comprising reacting steam with hydrocarbon to produce synthesis gas and producing a regeneratively cooled synthesis gas, passing the synthesis gas to a shift reactor to increase the concentration of hydrogen, adsorbing gases other than hydrogen and recovering hydrogen, desorbing gas species with oxidant to produce hot combustion gas; and passing the hot combustion gas through the reactor bed to heat the regenerative reactor bed (col. 3, 8). Kobayashi also teach that it is known to use a pressure swing adsorber (col. 1).

Although Kobayashi does not specifically disclose carrying out the method in a “pressure swing reformer”, the process carried out appears to be substantially similar. Additionally, Kobayashi teach that the pressure of the process can be elevated to a desired level by controlling flow rates of the feed streams and product streams (col. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the pressure of the process, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the pressure by the reasoned explanation that controlling flow rates of feed and product streams to elevate process pressure is well known in the art.

Additionally, Barr teaches a process for producing hydrogen (col. 1) wherein the reforming process is carried out under pressure for the purpose of avoiding compressing costs (col. 1).

Therefore, it would have been obvious to one of ordinary skill in the art to provide a reforming process is carried out under pressure in Kobayashi in order to avoid compressing costs (col. 1) as taught by Barr.

Kobayashi fail to teach the claimed space velocity of the reaction.

Tonkovich teach a method of steam reforming hydrocarbons (col. 5) wherein the reactions are carried out at the claimed space velocities (col. 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the hydrocarbon reforming reactions are carried out at the claimed space velocities (col. 12) in a well known method of producing syngas from hydrocarbon reforming as taught by Tonkovich.

Khandkar teach a method of steam reforming hydrocarbons (col. 3) wherein the reactions are carried out at a space velocity of 350 h^{-1} (col. 19).

Khandkar also teach that manufacturer of the reformer suggests a space velocity of 2000 h^{-1} and that the cost of the catalyst is lower for higher space velocities (col. 19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the space velocity of the reformer, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the space velocity of the reformer by the reasoned explanation that the manufacturer of the reformer suggests a space velocity of 2000 h^{-1} and that the cost of the catalyst is lower for higher space velocities as taught by Khandkar.

It appears that the prior art teaches a method of producing synthesis gas at a temperature in the range of temperatures used in high temperature water gas shift reactions such that regenerating, reforming, and cooling is conducted at a pressure and temperature to provide a synthesis gas stream having a temperature suitable for water gas shift reactions (Kobayashi, col. 3, 8).

Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi ‘530 in view of Barr ‘835 and Towler ‘994 and any one of Tonkovich ‘506 or Khandkar ‘114.

Kobayashi teach a process as described above.

Kobayashi fail to teach the claimed temperature of the flue gas exiting the reformer, the claimed temperature of the synthesis gas provided by the reforming temperature conditions.

It appears that the prior art of record teaches cooling the effluent of the reformer with a regenerating bed. (Kobayashi, col. 3, lines 40-52). Towler teaches a temperature of 700°C at the end of the reformer (analogous to the first zone of the present invention) and a temperature of 400-450°C after a heat exchange step for the purpose of providing an effluent with a suitable temperature for water gas shift reaction (cooled with water, col. 14).

Therefore, it would have been obvious to incorporate the temperature profile (400-450°C after heat exchange) in Kobayashi in order to provide an effluent having a temperature for the substantially similar method of water gas shift processing as taught by Towler et al.

Because Kobayashi teaches the interchangeability of water cooling and regenerative bed cooling, one of ordinary skill in the art would recognize that the temperature profiles taught in Towler can be achieved by regenerative bed cooling.

Towler teaches a temperature of 400-450°C after a heat exchange step (col. 14). Therefore, it appears that Towler teaches measuring the temperature after a heat exchange step and that Kobayashi teaches a heat exchange step after reforming wherein the heat exchange step is performed by cooling the effluent of the reformer with a regenerating bed (analogous to the regenerative bed zone of the present invention) (col. 3).

Additionally, Towler teach combusting waste products with air to produce flue gas (col. 6) wherein the flue gas is at a temperature of 400-800°C for the purpose of providing heat to the steam reforming and pre-reforming zone (col. 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein the flue gas is at a temperature of 400-800°C in Kobayashi in order to provide heat to the steam reforming and pre-reforming zone (col. 12) as taught by Towler.

Additionally, Kobayashi teaches that the effluent of the reformer can be treated with a heat exchange process including water cooling and regenerative bed cooling (col. 3).

Additionally, Kobayashi teach that it is known to use pressure swing adsorption process to separate hydrogen from other gases (col. 1).

Kobayashi also teach that at least part of the flue gas is recycled to the reformer (col. 5-6, fig. 2) and teach a process for producing steam using indirect heat exchange (col. 3).

Therefore, it would have been obvious to use at least part of the flue gas created in the combustion process to produce steam because the flue gas is used in heat-exchange processes and because steam is created in the process using indirect heat exchange.

Additionally, it would have been obvious to use the regeneratively cooled flue gas to form steam as the regeneratively cooled flue gas would be capable of forming steam through heat exchange.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi ‘530 in view of Barr ‘835 and any one of Tonkovich ‘506 or Khandkar ‘114 and Hirata ‘239.

Kobayashi teach a process for producing hydrogen as described above.

Kobayashi fails to teach that the air provided in the regeneration cycle is compressed air.

Hirata teach a turbine and reformer system (col. 1) wherein fuel is combusted with compressed air (col. 3) for the purpose of providing electricity and providing means for raising the temperature of the reformer (col. 3).

Therefore it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide fuel combusted with compressed air in Kobayashi in order to provide electricity and providing means for raising the temperature of the reformer.

Claims 10-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi ‘530 in view of Barr ‘835 and Towler ‘994 and Sederquist ‘805 and any one of Tonkovich ‘506 or Khandkar ‘114.

Kobayashi teach a process for producing hydrogen comprising reacting steam with hydrocarbon to produce synthesis gas and producing a regeneratively cooled synthesis gas, passing the synthesis gas to a shift reactor to increase the concentration of hydrogen, adsorbing gases other than hydrogen and recovering hydrogen, desorbing

gas species with oxidant to produce hot combustion gas; and passing the hot combustion gas through the to heat regenerative reactor bed (col. 3, 8). Kobayashi also teach that it is known to use a pressure swing adsorber (col. 1).

Although Kobayashi et al. does not specifically disclose carrying out the method in a “pressure swing reformer”, the process carried out appears to be substantially similar. Additionally, Kobayashi et al. teach that the pressure of the process can be elevated to a desired level by controlling flow rates of the feed streams and product streams (col. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the pressure of the process, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the pressure by the reasoned explanation that controlling flow rates of feed and product streams to elevate process pressure is well known in the art.

Additionally, Barr teaches a process for producing hydrogen (col. 1) wherein the reforming process is carried out under pressure for the purpose of avoiding compressing costs (col. 1).

Therefore, it would have been obvious to one of ordinary skill in the art to provide a reforming process is carried out under pressure in Kobayashi et al. in order to avoid compressing costs (col. 1) as taught by Barr.

Kobayashi fail to teach the claimed temperature of the flue gas exiting the reformer, the claimed temperature of the synthesis gas provided by the reforming temperature conditions.

It appears that the prior art of record teaches cooling the effluent of the reformer with a regenerating bed. (Kobayashi, col. 3, lines 40-52). Towler teaches a temperature of 700°C at the end of the reformer (analogous to the first zone of the present invention) and a temperature of 400-450°C after a heat exchange step for the purpose of providing an effluent with a suitable temperature for water gas shift reaction (cooled with water, col. 14).

Therefore, it would have been obvious to incorporate the temperature profile (400-450°C after heat exchange) in Kobayashi in order to provide an effluent having a temperature for the substantially similar method of water gas shift processing as taught by Towler et al.

Additionally, Kobayashi teaches that the effluent of the reformer can be treated with a heat exchange process including water cooling and regenerative bed cooling (col. 3).

Because Kobayashi teaches the interchangeability of water cooling and regenerative bed cooling, one of ordinary skill in the art would recognize that the temperature profiles taught in Towler can be achieved by regenerative bed cooling.

Towler teaches a temperature of 400-450°C after a heat exchange step (col. 14). Therefore, it appears that Towler teaches measuring the temperature after a heat exchange step and that Kobayashi teaches a heat exchange step after reforming

wherein the heat exchange step is performed by cooling the effluent of the reformer with a regenerating bed (analogous to the regenerative bed zone of the present invention) (col. 3).

Additionally, Towler teach combusting waste products with air to produce flue gas (col. 6) wherein the flue gas is at a temperature of 400-800°C for the purpose of providing heat to the steam reforming and pre-reforming zone (col. 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein the flue gas is at a temperature of 400-800°C in Kobayashi in order to provide heat to the steam reforming and pre-reforming zone (col. 12) as taught by Towler.

Additionally, Kobayashi teach that it is known to use pressure swing adsorption process to separate hydrogen from other gases (col. 1).

Kobayashi also teach that at least part of the flue gas is recycled to the reformer (col. 5-6, fig. 2).

Kobayashi teach a process for producing steam using indirect heat exchange (col. 3).

Therefore, it would have been obvious to use at least part of the flue gas created in the combustion process to produce steam because the flue gas is used in heat-exchange processes in the process and because steam is created in the process using indirect heat exchange.

Additionally, it would have been obvious to use the regeneratively cooled flue gas to form steam as the regeneratively cooled flue gas would be capable of forming steam through heat exchange.

Kobayashi fail to teach two reforming zones, the first reforming zone containing packing materials and a steam reforming catalyst and the second reforming zone containing bed packing materials at a temperature lower than the first reforming zone.

Sederquist teach a reforming process for producing hydrogen (col. 1) wherein there are two zones wherein the first zone contains packing comprising alumina or magnesium oxide (col. 6) and a steam reforming catalyst (col. 8) and that packing material may be present in both zones (col. 8).

From this disclosure it would have been obvious to one of ordinary skill in the art to provide a first reforming zone containing packing materials and a steam reforming catalyst and the second zone containing bed-packing materials at a temperature lower than the first reforming zone because Sederquist teaches that both zones may contain only packing material but that reform catalyst may be used to drive the hydrocarbon conversion to completion.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was provided to provide a first reforming zone containing packing materials and a steam reforming catalyst and the second zone containing bed-packing materials at a temperature lower than the first reforming zone in Kobayashi because Sederquist clearly suggests the embodiment and both Kobayashi and

Sederquist are drawn to substantially similar processes including reforming, combusting, and water gas shift reactions.

Kobayashi fail to teach the claimed space velocity of the reaction.

Tonkovich teach a method of steam reforming hydrocarbons (col. 5) wherein the reactions are carried out at the claimed space velocities (col. 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the hydrocarbon reforming reactions are carried out at the claimed space velocities in a well known method of producing syngas from hydrocarbon reforming as taught by Tonkovich.

Khandkar teach a method of steam reforming hydrocarbons (col. 3) wherein the reactions are carried out at a space velocity of 350 h^{-1} (col. 19).

Khandkar also teach that manufacturer of the reformer suggests a space velocity of 2000 h^{-1} and that the cost of the catalyst is lower for higher space velocities (col. 19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the space velocity of the reformer, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the space velocity of the reformer by the reasoned explanation that the manufacturer of the reformer suggests a space velocity of 2000 h^{-1} and that the cost of the catalyst is lower for higher space velocities as taught by Khandkar.

Additionally, the heat transfer parameter is proportional to the bed packing and space velocity. It appears that the prior art of record teaches substantially similar bed packing (col. 6, Sederquist) and space velocities (col. 19, Khandkar; col. 12, Tonkovich) such that the heat transfer parameter would be inherently taught by the prior art.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi ‘530 in view of Barr ‘835 and Towler ‘994 and Sederquist ‘805 and Hirata ‘239 and any one of Tonkovich ‘506 or Khandkar ‘114.

Kobayashi teach a process for producing hydrogen as described above.

Kobayashi fail to teach the air provided in the regeneration cycle is compressed air.

Hirata teach a turbine and reformer system (col. 1) wherein fuel is combusted with compressed air (col. 3) for the purpose of providing electricity and providing means for raising the temperature of the reformer (col. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant’s invention was made to provide fuel combusted with compressed air in Kobayashi in order to provide electricity and providing means for raising the temperature of the reformer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz
June 1, 2009

/Stanley Silverman/
Supervisory Patent Examiner, AU 1793